

Application No. 10/617,281
Amendment
June 17, 2008

REMARKS/ARGUMENTS

Claims 1, 3, 5, 6, 9, 10, 12, 14, 15 and 18 were presented for examination.

Claim 1 was objected to because of the following informality: line 5, after the preamble, claim 1 the : "...I and Q lowpass_filters..." should be "...I and Q lowpass filters..."

Applicant has amended claim 1 to reflect the correction required by the Examiner.

Rejections under 35 U.S.C. § 103(a)

Claims 1, 9, 10 and 18 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Mohindra (US Patent No. 7,035,341), in view of Mohindra (US Patent No. 6,744,829).

In order to sustain a rejection under 35 U.S.C. § 103(a) there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness. This entails consideration of both the "scope and content of the prior art" and "level of ordinary skill in the pertinent art" aspects of the Graham test including secondary considerations such as teaching away. *IN RE LEONARD R. KAHN*, 441 F.3d 977 (Fed. Cir. 2006). Inferences and creative steps that a person of ordinary skill in the art would employ can be used. The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results. *KSR INT'L CO. v. TELEFLEX INC.* 127 S. Ct. 1727 (2007).

Therefore, Applicant has added new limitations in currently amended claim 1 so as to avoid the Examiner's rejection of obviousness. Thus, in currently amended claim 1, Applicant has added a limitation regarding the fact that by minimizing the phase difference between the I and Q output tones at the radian frequency ω_0 , the cross correlation feedback signal is driven to near zero which is not disclosed in any of the prior art document (as a matter of fact, none of the prior art use a correlation feedback signal).

Indeed, Examiner rightfully acknowledged that Mohindra ('341) does not expressly teach: a correlator for cross correlating said I and Q output tones for providing a cross correlation feedback signal, said correlation feedback signal used for adjusting said adjustable characteristic, which Applicant does agree. However, Examiner also added that Mohindra ('829) discloses: a correlator for cross correlating said I and Q output tones (Fig.3 cross-correlation by mixer of $V_I(t)$ and $V_Q(t)$ column 3, lines 17-20, specifically lines 42-51 and equation on line 45 right hand side) etc....

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Applicant agrees that the use of cross-correlation of I and Q signals to generate an adjustment signal is shown in Mohindra ('829). However, this cross-correlation is applied as a correction signal to an RF LO generator, not a baseband filter. In Mohindra ('341), two separate RF signals are generated at different points in the calibration process to produce a correction signal, requiring a DSP to store the signals and compute the correction value.

On the contrary in the present invention, the signals I and Q are injected at baseband and the cutoff frequency of one lowpass filter is adjusted until the cross-correlation is zero. Fig.4 of the present invention illustrates the amplitude versus frequency for the I analog filter 18I and the Q analog adjustable filter 19Q in the receiver 10A. Paragraph [0029] of the present invention also specifies that "the frequency response of the Q analog adjustable filter 19Q is adjusted by an adjustment that is controlled by the cross correlation feedback signal (so that the **cross correlation feedback signal is about zero**) for **reducing the frequency dependent I/Q phase error**".

In the same way, Fig.5 of the present invention illustrates the delay (phase) versus frequency. The amount of the lag in the Q adjustable allpass filter 45Q is adjusted by an adjustment that is controlled by the cross correlation feedback signal so that **the cross correlation feedback signal is driven to near zero**, thereby reducing the frequency dependent I/Q phase error".

Therefore, in view of currently amended claim 1, Applicant respectfully requests that the rejection under 35 U.S.C. § 103(a) of claim 1 and its dependent claims 3, 5, 6 and 9 in view of the combination of Mohindra ('341) and Mohindra ('829) and Armstrong be withdrawn.

Applicant has also amended claim 10 to include the limitation regarding the fact that by minimizing the phase difference between the I and Q output tones at the radian frequency w_0 , the cross correlation feedback signal is driven to near zero which is not disclosed in the prior art.

Therefore, in view of currently amended independent method claim 10, Applicant also respectfully requests that the rejections under 35 U.S.C. § 103(a) of claim 10 and its dependent claims 12, 14, 15 and 18 in view of any the combination of the prior art documents be withdrawn.

Accordingly, request is made for reconsideration of the application and allowance of the claims, as amended.

While it is believed that the instant response places the application in condition for allowance, should the Examiner have any further comments or suggestions, it is

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respectfully requested that the Examiner contact the undersigned in order to expeditiously resolve any outstanding issues.
Respectfully submitted,

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